

September 28, 2010

Secretary John Hanger  
Pennsylvania Department of Environmental Protection  
Rachel Carson State Office Building  
400 Market Street  
Harrisburg, PA 17101

Re: Cabot Oil & Gas Corporation

Dear Secretary Hanger:

On behalf of Cabot Oil & Gas Corporation, this letter sets forth very serious concerns about our ongoing interaction with you and the Pennsylvania Department of Environmental Protection in relation to Cabot's natural gas production activities. Cabot has tremendous respect and appreciation for the important role that you and the Department play in protecting the resources and people of the Commonwealth. Our employees and representatives work with many federal and state agencies to conduct our business in a responsible manner that respects the environment and the communities where we live and work.

Almost a year ago, under threat of shut down of all well pad construction, drilling and hydraulic fracturing operations, Cabot entered into a Consent Order and Agreement (dated November 4, 2009) with the Department wherein it was "agreed" that Cabot would temporarily cease drilling and hydraulic fracturing in an area in and around Dimock and Springfield townships. Cabot was presented with this "option" as a result of concerns raised to the Department by local residents who alleged that there was an "explosion" at the Fiorentino residence and purported evidence of methane contamination in water wells at 14 residences. Subsequently and pursuant to the terms of that Consent Order and Agreement, Cabot submitted information to the Department that allowed a resumption of drilling and hydraulic fracturing in that area while operations continued unaffected outside of that area (the "Affected Area" as it is referred to in the Consent Order and Agreement).

Pursuant to the terms of the November 4, 2009 Consent Order and Agreement, Cabot was to submit plans and a report to achieve a "compliance date" of March 31, 2010. Cabot submitted all of the necessary information and plans in advance of that "compliance date," but did not receive approval from the Department to proceed in time to achieve the "compliance date." In recognition of the fact that, due to the Department's failure to approve or comment on Cabot's plans, Cabot could not meet the terms of the Consent Order and Agreement, the Department decided to enter into a modification of that agreement to allow Cabot additional time. Drafts of a modification were exchanged and a final version was being discussed in April 2010. Suddenly and abruptly, on April 12, 2010, you directed your counsel to inform Cabot that all of Cabot's operations were to cease. On April 13, 2010, I traveled to Harrisburg and a meeting was held with you and your staff on April 14, 2010. Under extraordinary duress and, pursuant to your demand, Cabot was handed and compelled to sign what you declared to be a new "non-negotiable" Consent Order and Agreement that included "admissions" with which you knew Cabot did not agree and ordered plugging of wells that you knew were not necessary. At that time, Cabot advised you and the Department that a deliberative, scientific investigation would be

required to assess whether the reports were valid and, if so, to what extent Cabot's activities were responsible for causing these issues. In the interim, and despite the Hobson's Choice presented, the Department and Cabot agreed that Cabot would take steps to provide the 14 impacted residences with whole house potable water and then methane treatment systems.

Since then, Cabot has devoted extraordinary resources, expertise and money to investigate the reported concerns and what, if any, role Cabot's activities played in bringing them about. That investigation was comprehensive; the consultants who performed it are among the most recognized experts in their fields (and are experts that you have personally recognized as such) and employed reliable scientific and engineering methodologies to reach their conclusions. The results of their investigation and analysis make one fact very clear: Cabot's well drilling and development activities are not the source of the methane gas reported to be in groundwater and water wells in and around Dimock and Springville townships.

### **Allegations Prompting the Consent Agreement and Order Have Been Disproven**

To begin with, the precipitating event that prompted the Department's accusations against Cabot – the reported "explosion" on the Fiorentino property – has subsequently proven to be a falsehood. There is absolutely no evidence whatsoever that an "explosion" occurred at the Fiorentino residence. Both the Springdale Fire Chief and the Director of the Susquehanna County Emergency Management Agency were on-scene on January 1, 2009 and concluded that there was no evidence of a fire or explosion in the well pit. Both you and the Department's staff have known this information for some time, yet you continue to trumpet this fictional "incident" in an effort to stir up public opposition and distrust toward Cabot and its activities in the region.

Moreover, experts in the field of well drilling, cementing, and casing operations have carefully examined historical records of operations at Cabot's wells in the area and concluded not only that Cabot's wells meet or exceed the standards for casing and cementing imposed by Pennsylvania law and the Department's regulations, but also meet or exceed the best practices in the natural gas production industry. Those same experts reach the conclusion that no Cabot well in the area is currently causing or allowing the discharge of methane gas or other pollutants into the surrounding groundwater or water wells.

Adding to our frustration, Cabot has presented the Department with overwhelming and conclusive proof that methane gas existed in groundwater and water wells in the area around Dimock and Springville townships long before Cabot began drilling in the area. This evidence includes sworn affidavits from residents who state that they have had methane in their water for over 30 years, sworn affidavits from water well drillers that they have personally encountered natural gas while drilling several water wells in the area, reports detailing hundreds of wells in and around the area that tested positive for methane prior to Cabot's activities, and official U.S. Geological Survey data concluding that methane gas was present in the area's groundwater decades before Cabot began operating there.

Cabot has even presented evidence that area residents, including at least one who is currently suing Cabot for allegedly contaminating his water supply, were known to light their tap water on fire on occasions before Cabot began its drilling operations in the region. To explain this phenomenon, Cabot has obtained and presented the Department with conclusive geologic

evidence that natural gas naturally occurs at shallow formations in the area due to the presence of numerous faults permitting shallow gas to migrate into the surface geology. Coupled with evidence that many water wells in the region are uncased or "open bore" wells, it is not surprising that natural gas is present in many residents' water. In fact, Cabot recently drilled a new water well at one of these properties using state of the art water well drilling techniques – techniques that should become standard for water well construction in the Commonwealth. The initial results from this effort indicate that no gas issues exist in this water well.

### **PADEP's Rejection of Cabot's Final Report Is Biased and Unsupported**

In the face of the evidence that has been presented to the Department, the Department's September 14, 2010 letter irrationally and arbitrarily persists in blaming Cabot for the presence of methane gas in local water wells and threatens Cabot with even more impositions on and violations of its legitimate economic rights and interests in the region. Included with this letter as Exhibit "A" is a detailed rebuttal of the Department's statements in that letter, in which Cabot demonstrates how the Department's conclusions are unfounded, irrational, and capricious.

You will see our concerns focus on the Department's (i) reliance on wholly unsubstantiated assertions made by residents who are currently suing Cabot in federal court and whose self-serving claims are thus, at best, worthy of the Department's skepticism, (ii) reliance on unscientific and unsupported conclusions of Daniel Farnham, a paid consultant for the those same plaintiffs, (iii) apparently deliberate refusal to acknowledge the long-known and indisputably naturally-occurring presence of methane gas in the local water supplies, and (iv) selective "cherry-picking" of data used in an attempt to support pre-determined conclusions. Frankly, the September 14 letter reads more like partisan rhetoric than an objective, scientific analysis of factual information that a government agency is compelled to use when exercising its enforcement authority.

Cabot has presented conclusive evidence of compliance with other provisions in the Orders regarding the cementing and casing of its wells in the so-called "Affected Area." But rather than accept actual proof, the Department's September 14 letter posits unsupported and speculative theories about how Cabot's wells are in fact discharging methane gas into the groundwater, and references vague and unspecified "corrective actions" the Department may seek to impose upon Cabot, including plugging more wells. **You should be aware that if Cabot again is arbitrarily required to plug and abandon the remaining wells identified in the Modified Consent Order, the associated costs are estimated to be significant – over \$5 million for the cost of plugging and abandonment plus millions of dollars in lost royalties to local landowners and many more millions of dollars in lost revenues to Cabot.**

### **The Orders Are Not Enforceable and Must Be Replaced**

In light of the Department's continued reliance on discredited claims and unscientific speculation in its dealings toward Cabot, it is clear that the November 4, 2009 Consent Order and Agreement, as well as its subsequent modifications (together, the Orders), are not valid or enforceable and should either be vacated, modified, or renegotiated to reflect reality and due process. To begin with, as I lay out in part above, those Orders were not the product of a fair hearing and due process, but rather were imposed upon Cabot under duress by means of threats

from you and others to interfere with or substantially shut down Cabot's operations in the Commonwealth. The Department well knows that Cabot's ability to hold and operate its leases are highly sensitive to drilling schedules, rig rentals, manpower commitments and lease expiration deadlines. The Department utilized that knowledge as leverage to extract factually unsupported (and now refuted) admissions and concessions from Cabot in the terms and requirements of the Orders.

Aside from depriving Cabot of any meaningful choice in whether to enter the Orders or exercise its constitutional right to contest the Department's charges, the Department abused its authority by explicitly "commingling" its grant of future drilling and well permits to Cabot's willingness to concede to the Department's demands in connection with the Orders. For good reason, the law is clear that these two functions of government cannot be tied together.

In addition to the utter lack of fairness in the process by which they were created, the Orders are predicated upon so many mistaken and/or deliberately misrepresented facts. The Orders also rely heavily on a statutory presumption of dubious constitutional validity that temporal and spatial proximity of a contaminated water well to a natural gas well are sufficient to lay blame for the contamination at Cabot's feet. At the very least, the validity of this presumption as applied to Cabot has been significantly undermined by the Department's steadfast refusal to acknowledge any of the many facts presented by Cabot to rebut it.

### **Cabot Continues to Make Good Faith Efforts to Comply**

Notwithstanding the circumstances under which the Orders were implemented and the growing (and now dispositive) evidence that they were predicated on erroneous factual bases, Cabot has gone to extreme ends to comply with the Orders in good faith. Cabot has worked to comply with the Orders not because it believed they accurately reflect Cabot's culpability for any damage to local water supplies, but because Cabot is determined to be a good corporate citizen and because the men and women of Cabot are also part of these communities. If that requires Cabot to undertake obligations beyond what it believes it is legally required to do, Cabot is willing to undertake reasonable measures toward that end. Cabot's efforts in and around Dimock and Springville townships are no different. Exhibit "B" provides a summary of key Cabot's key efforts to date.

### **PADEP's Biased Reporting to the Public Cannot Continue**

On several occasions, the Department has inaccurately reported about Cabot to the public and cooperated or at least been complicit in allowing this "investigation" to become something of a media circus. For example, on August 23, 2010, certain plaintiffs sent photographs of alleged water tank contamination. You and the Department were well aware that Cabot acted immediately – and was prepared within hours of receiving the photographs – to have a clean water supply delivered, a new tank placed in the home, and testing conducted to locate the source of the alleged contamination. Those efforts were thwarted by the plaintiffs' attorneys, yet you falsely indicated in a media event that Cabot was taking no action to assist the plaintiffs and that you would force Cabot to do exactly what you knew it had already been trying to do for a week. This is obvious political pandering at Cabot's expense.

Your conduct indicates you have an obvious and unfounded bias against Cabot and in favor of the private litigation plaintiffs, to the point that your conduct suggests coordination with plaintiffs' counsel. You have repeatedly met with the plaintiffs and their counsel in their homes and your office, while denying Cabot the right to have its Pennsylvania counsel provide input during telephone conferences and meetings with you, including meetings where you have forced Cabot to make admissions and agree to undefined and impossible regulatory compliance obligations.

### **Whole-House Treatment Systems Remain the Appropriate Solution**

You have induced Cabot to undertake expensive efforts to comply with your demands, which Cabot has dutifully done, only to have you reverse position and publicly vilify Cabot for not having complied with new and different demands. The latest example is the implementation of the "whole-house" water treatment system for any residents whom the Department declares to have an "affected" water supply.

The April 15, 2010 Modification to November 4, 2009 Consent Order and Agreement clearly states that Cabot can fulfill its obligation to "restore" any so-called "affected" water supplies by installing, at its cost, a whole-house water treatment system at the residence. Cabot acceded to your demand that it sign the modification to the Consent Order in large part in reliance on your statement that you supported this system as the "preferred" solution to water supply issues in the area. The Orders even provide that Cabot's obligations in this regard will be deemed to be fulfilled if it offers such a system but a resident rejects it.

In reliance on our agreement, Cabot purchased fourteen of these systems and attempted to install them. But, when a few of the residents – most or all of them private litigants against Cabot – initiated an appeal of the modified Consent Order and objected to the whole-house water treatment system, you once again reversed course and abandoned our agreement in apparent pursuit of political advantage.

You have now taken the position that the only acceptable solution to water supply issues in the area is a wasteful and environmentally disruptive community pipeline. Even in this effort, your conduct has lacked considered decision-making premised on a deliberative, fact-based process. Specifically, you have interfered with Cabot's legitimate efforts to provide a safer, more reliable water supply for area residents in a rational and feasible manner.

Cabot and the Department had been working with water companies to evaluate alternative methods to address water supply issues. Yet, after first instructing one of those companies, PA American Water, not to talk to Cabot at all, you then instructed it to discuss only the extension of a public water line from Montrose to Dimock, as if this approach replaced our agreement without any further discussion. You have taken this position despite the admission by the Department's own legal counsel on August 10, 2010 that there is no legal basis or support for forcing Cabot to install a community water supply pipeline.

\* \* \* \*

### **Next Steps**

Cabot provides Americans a valuable economic resource – natural gas, recognized as one of the cleanest energy alternatives currently available. Citizens in the areas where Cabot operates – including Dimock and Springville townships – benefit economically from Cabot's presence, both in the form of landowner royalties from natural gas produced and sold, as well as in increased job opportunities and corresponding economic prosperity in the region. Cabot carries on these operations in a responsible and safe manner, complying with laws and regulations of the Commonwealth and with the best practices in the industry.

Where, as in this instance, concerns have been expressed regarding the safety of Cabot's operations and its impact on essential community resources, Cabot has erred on the side of cooperation and contribution of its own resources toward reassuring citizens and alleviating the causes of those concerns, rather than digging its heels in and fighting to demonstrate an absence of culpability.

Despite the fundamental and very serious concerns outlined above, Cabot continues to seek a constructive dialogue with you and the Department and, within reason, will continue to take appropriate actions to allay the concerns of communities in which we operate. We hope and expect that you and the Department will respect the results of the September 27, 2010 technical meeting accordingly as we seek to find workable and rational solutions to the concerns of local residents. (At that meeting, the Department's representatives agreed that more time is necessary to allow their evaluation whether Cabot's operations are impacting water supplies and that a public water supply system is not necessary to meet statutory and regulatory requirements.) Thereafter, we strongly urge the Department to engage in a constructive discussion to replace the Orders with an agreement that reflects a set of sensible and measurable steps that remain for Cabot to satisfy the Department and move forward.

I look forward to your reply.

Very truly yours,

A handwritten signature in black ink, appearing to read "Dan O. Dinges". The signature is fluid and cursive, with the first name "Dan" and last name "Dinges" clearly distinguishable.

Dan O. Dinges  
Chairman, President and Chief Executive Officer  
Cabot Oil & Gas Corporation

cc: Governor Edward G. Rendell

Exhibit A – Detailed Rebuttal of PADEP's Letter Dated September 14, 2010  
Exhibit B – Summary of Cabot's Good Faith Efforts

## Exhibit A

### CABOT'S REBUTTALS TO THE DEPARTMENT'S FACTUAL DETERMINATIONS IN ITS SEPTEMBER 14, 2010 LETTER REGARDING THE DEPARTMENT'S DETERMINATION UNDER PARAGRAPH 4.i.6) OF THE MODIFIED AGREEMENT

#### Paragraph 1:<sup>1</sup>

**“To date, the Department has obtained no information to demonstrate that free combustible gas was present in any residential water supply before Cabot began drilling activities within the Affected Area.”**

*Cabot has obtained affidavits from residents in and near the Affected Area who state that they have had methane in their water for over 30 years, long before Cabot began drilling in the area. The methane was observed by the residents as bubbles in the water, in addition to the sound of gas bubbling in the pipes and the well. (See resident affidavits attached hereto as Tab 1.) Another resident, who resides inside of the Affected Area, stated under oath that her wells, which were drilled in 1945 and 1980 have always contained methane. (Tab 1) Moreover, despite one well venting into her basement, she remembers using a “torch” to install copper piping in the basement, with no problems at all. This resident further stated that the Department visited her residence in 2009, prior to Cabot conducting drilling near her home, and conducted tests in her home for combustible gas. Immediately upon detecting gas, the DEP representative told the resident “you have to get Cabot to pay for this problem,” inappropriately concluding that Cabot was responsible for the presence of methane without further investigation. Not only does this demonstrate the Department’s predetermined position that Cabot is responsible for any and all methane migration in the area, it further demonstrates that the Department is aware that free combustible gas has been located in wells where no drilling activity has occurred.*

**“Moreover, at the meeting on August 10, 2010, among Counsel for the Department, for Cabot and for certain Dimock Township families who have appealed a portion of the Modified Agreement, a consultant who worked for Cabot in the past, Mr. Daniel Farnham, stated that no free combustible gas was detected in any residential water supply during the pre-drill assessment that he performed for Cabot within the Affected Area.”**

*To further support its position, the Department is relying on one anecdotal statement made by Mr. Farnham that “no free combustible gas was detected in any residential water supply during the pre-drill assessment that he performed for Cabot within the Affected Area.” During the meeting, Mr. Farnham did not offer any actual data or documentation to support his statements. Additionally, Mr. Farnham did not reveal the type of equipment that he used to allegedly conduct these tests, whether the equipment was calibrated, or the manner and method by which he conducted the tests. For example, Mr. Farnham did not state whether he measured for free gas inside the homes at a spigot, whether he followed a protocol of letting water run prior to testing, and if so, for how long, or whether he tested for free combustible gas within the well head. Thus,*

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*1 The bolded text in quotation marks is taken directly from the Department’s September 14 letter.*

*it is entirely possible that free combustible gas was present in the water supplies for which he conducted tests in the Affected Area.*

*Moreover, the Department is relying on statements made by Mr. Farnham during the same meeting where the Department questioned the accuracy and doubted Mr. Farnham's methane readings of 370 mg/l and 170 mg/l from samples taken from the Affected Supplies. At that time, he claimed that in prior cases he obtained methane readings in the range of 720 mg/l - something that is impossible at atmosphere or even in a water well at a depth of 700 feet. See Technical Measures for the Investigation and Mitigation of Fugitive Methane Hazards in Areas of Coal Mining, U.S. Dept. of Interior, Office of Surface Mining Reclamation and Enforcement, Appalachian Regional Coordinating Center, September 2001, sec. 3.2.1 ("Harder et al reported in oil and gas producing fields, methane concentrations as great as 127 ppm (mg/L) in aquifers as deep as 700 feet." ).<sup>2</sup> The deepest water well of any of the Affected Supplies is 800 feet, in which no methane was detected by Mr. Farnham.*

*Finally, it is entirely inappropriate for the Department to rely on one statement made by Mr. Farnham during the August 10, 2010 meeting to conclude that there was no free combustible gas prior to Cabot's drilling activities, when, in January 2009, Mr. Farnham advised the Department that he personally "hit natural gas in several water wells in NW Susquehanna County, a few in the Dallas area (lower Wyoming County) and Bradford County." Ironically, the Department is relying in part on Mr. Farnham's statement as part of its overall conclusion that the only acceptable solution is a community pipeline, when Mr. Farnham personally offered to assist the Department with the installation of air strippers and treatment systems to treat iron, manganese, H<sub>2</sub>S and remove gasoline from water. (See January 28, 2009 email from Dan Farnham to Tony Operendek, attached hereto as Tab 2.)*

Paragraph 2:

**"After Cabot began drilling activities within the Affected Area, free combustible gas was detected by both the Department and Cabot within the Affected Area at residential water supplies."**

*As noted above, the expert upon whom both the Plaintiffs and the Department appear to rely stated that he personally "hit natural gas in several water wells in NW Susquehanna County, a few in the Dallas area (lower Wyoming County) and Bradford County." Additionally, the affidavits attached hereto as Tab 1 demonstrate the presence of methane and combustible gas prior to Cabot's drilling activities. Reference also is made to Figure 3 of the Final Report that details hundreds of areas within Susquehanna County (including many in the Affected Area) that tested positive for methane in the water supply prior to drilling by Cabot in those areas.*

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<sup>2</sup> It should be noted that one of the four authors of this report (OSM Report) was a hydrogeologist with the Department.



Paragraph 3:

**“To date, we have obtained no information that bubbling of natural gas occurred within or that vapor distortions occurred above residential water supplies before Cabot began drilling activities in the Affected Area. Had these conditions naturally existed during the drilling of the drinking water wells within the Affected Area, we believe the homeowner and/or the well driller would not have completed these wells as potable sources.”**

*As noted above, the affidavits attached hereto at Tab 1 demonstrate that the presence of methane naturally existed for decades prior to Cabot's drilling in Susquehanna County. Additionally, a 1957 publication by the U.S. Geological Survey describes a spring northwest of Dimock as follows: “Bubbles of inflammable gas rise to the surface and can be ignited with a match ... . It seems probable that the gas is methane (CH<sub>4</sub>), as this gas is known to come from gas wells in the Chemung formation in several of the counties in the north-central part of Pennsylvania.” Stanley W. Lohman, *Ground Water in Northeastern Pennsylvania*, U.S.G.S. 1957, p. 263. Moreover, contrary to the Department's “belief,” both drillers and homeowners completed and used these wells known to contain methane as potable water supplies, and continue to do so to this day. This is not surprising as the presence of methane in water does not “in any way affect the potability of the water.” OSM Report, sec. 3.1.*

*Finally, because a large number of persons included in the Affected Area are plaintiffs in a federal court litigation against Cabot, who have retained Mr. Farnham as their expert, it would be surprising if those individuals would voluntarily come forward with evidence that would, essentially, undercut their allegations that are forming the basis for a multi-million dollar claim against Cabot.*

Paragraph 4:

**“After Cabot began drilling activities within the Affected Area, Department staff observed bubbling of natural gas within and vapor distortions above several residential water supplies within the Affected Area.”**

*See response to Paragraph 3 above. Moreover, no testing data has been provided that establishes that the “observed” bubbling or vapor distortions were from methane as opposed to other gases, such as carbon dioxide. “Many homeowners suspect methane when they hear a gurgling noise coming from their wells. Methane can emit this sound, but other gases (such as carbon dioxide) may be the source. Methane escapes quickly from water, making it difficult to accurately measure.” Water Facts #24: Methane Gas and Its Removal from Wells in Pennsylvania, Penn State 2006.*

*Importantly, neither the DEP nor any other gas driller in Susquehanna County, as far as Cabot is aware, was testing for methane in the water supply prior to the time that Cabot began its drilling activities. Methane just was not something that was included in the testing, nor was its inclusion mandated by the DEP. Therefore, the lack of test results for methane in the water supply in the Affected Areas is not an indication of either the presence or absence of methane in the water pre-drilling.*

Paragraph 5:

**“The original explosion in the well house for the water supply that serves the Fiorentino residence coincided with Cabot’s drilling activities within the Affected Area. If free combustible gas was present in this water supply before Cabot began drilling within the Affected Area, explosive conditions would have been created in the well at an earlier date. Mrs. Fiorentino has reported to the Department that no explosions in her well house occurred before Cabot began drilling within the Affected Area.”**

*First and foremost, there is absolutely no evidence whatsoever that an “explosion” occurred at the Fiorentino residence. Both the Springdale Fire Chief and the Director of the Susquehanna County Emergency Management Agency were on-scene on January 1, 2009 and concluded that there was no evidence of a fire or explosion in the well pit. (See affidavits of Dan Smales and Charlene Moser, attached hereto as Tab 3.) According to Fire Chief Smales, upon his inspection of the well pit, there was no disturbance to the well cap, the pump, the connecting pipes, or the blue holding tank in the pit - none of which were bolted to the floor. It is inconceivable that an alleged “explosion” powerful enough to blow off an 8’ by 8’ concrete slab, approximately 4 to 6 inches thick, would result in no damage or disturbance whatsoever to the contents of the well pit. Moreover, basic physics belies the allegation that an “explosion” removed the concrete slab from the well pit. In this instance, the concrete slab was vented with a 3’ by 3’ square hole in the center for access to the well and pipes.<sup>3</sup> The pressure required to lift the concrete slab could not occur, given that the gas would have followed the path of least resistance and escaped through the opening. Additionally Chief Smales noticed no evidence of an incendiary explosion, such as melted wires or burn marks on the concrete.*

*To further support the fact that there was not sufficient combustible gas to cause an explosion of any kind, Mrs. Fiorentino’s son stated that a week prior to the alleged “explosion,” he was in the well pit using an acetylene torch to thaw the frozen pipes. If indeed the well pit contained combustible gas, such use of the torch would have caused an explosion. Finally, of course, Mrs. Fiorentino is the lead plaintiff in the pending federal suit against Cabot, and the Department’s wholesale adoption of her clearly biased allegations is a most improper basis for the Department’s conclusion. It also is worrisome that the Letter neglects to mention that the technical report includes a statement that the “explosion” may have been a “coincidence.”*

Paragraph 6:

**“The presence of an un-vented cap on the drinking water well (as shown in Fig. 14 k of the Wylie section of Cabot’s Final Report) at the Affected Water Supply that serves the two Carter residences and at the Affected Water Supply that serves the Maye residence indicates that free combustible gas was not present during the drilling of these drinking wells. We doubt that a well driller would have installed a cap without a vent if the water supply had a noticeable amount of free combustible gas.”**

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*3 Importantly, this hole was covered only by a plastic picnic table that the Fiorentinos reported would routinely blow away when the wind blew.*

*As an initial matter, there is no evidence that the un-vented caps on the drinking water wells were original caps as opposed to caps that were installed at a later time. Additionally, as set forth in the affidavit of Mrs. Locey, attached at Tab 1, there was a presence of methane in both of her wells, neither of which was vented by the driller. Mrs. Locey's wells were not vented until the Department conducted tests on the supplies. Thus, it is inappropriate for the Department to base such a critical determination on "doubts" about what a driller may or may not have done when the wells were originally drilled.*

*Moreover, if the presence of an un-vented well cap on two water wells leads the Department to conclude that methane was not present in the drinking water for those two wells, the presence of a vented well cap on the remaining water wells should, logically, lead the Department to conclude that methane was present in the remaining wells.*

Paragraph 7:

**"During the time that Cabot was plugging and taking other remedial actions at four of the Defective Gas Wells this past year, the Department observed a significant decrease in the level of free combustible gas in two Affected Water Supplies. As stated above, this decrease of free combustible gas indicate [sic] that proper cementing practices and/or good quality cement was now preventing the flow of natural gas within the well bore of these four Defective Wells into the groundwater.**

*As the Department has acknowledged as recently as during a September 27, 2010 meeting with Cabot, there are many variables that exist and no simple cause/effect determination can be made without knowing all of these variables. In fact, at that meeting, the Department acknowledged increases and decreases of free combustible gas for which they could offer no explanation; increases and decreases that occurred at times completely unrelated to any of Cabot's activities. Factors and variables affecting free combustible gas readings include seasonal issues, water usage rates, off-gassing of dissolved methane in water, water well construction, location of sampling locations and sample measurement error. The Department has confirmed that it lacks adequate information to consider these variables in relation to sample results and therefore cannot confirm that the remediation measures account for these decreases.*

Paragraph 8:

**"Screening done by both the Department and Cabot indicates that steady levels of free combustible gas continues in the Affected Water Supplies that serve the two Carter residences, the Nolan "Scott" Ely residence, and the Roos residence. This shows that natural gas continues to migrate from one or more of Cabot's Gas Wells into the groundwater and continues to adversely affect residential water supplies within the Affected Area."**

*While Cabot's readings correlate with the readings obtained by the Department, the readings are not indicative of methane coming from Cabot's gas wells in the area. If the methane being found in the three water supplies were coming from Cabot's gas wells, it would be logical to conclude that all water supplies within the same general distance to those gas wells would have similar*

*methane readings. However, that is not the case. Indeed, recent tests conducted by the Department indicate that the methane in the Roos' water is microbial in nature. Thus, it cannot be present as a result of Cabot's activities.*

*The Carter water supply is located 378 feet from the Gesford 2 gas well and 401 feet from the Gesford 7 gas well. However, the Department's own testing results show that the Farnelli water supply, which is 680 feet from the Gesford 7 gas well and 738 feet from the Gesford 2 gas well, has registered little, if any, methane. (See Summary of Free Gas and Dissolved Gas Samples Taken by DEP for Three Categories of Water Supplies, e-mailed from D. Duffy to K. Cunningham, L. Lewis, R. Hosking, and P. Schmidt on Aug. 5, 2010 attached hereto as Tab 3.) The Nolan "Scott" Ely water supply, which the Department recognizes registers only between .9 and 2.5%, is 679 feet from the Gesford 9 gas well and 718 feet from the Gesford 3 gas well. However, the Hubert water supply (640 feet from the Gesford 3 gas well and 680 feet from the Gesford 9 gas well) is one the Department recognizes in the technical data that accompanies its September 14 letter as having eliminated free gas.*

*Finally, the Roos' water supply is 1016 feet from the Ratzel 1 gas well, 1021 feet from the Ratzel 3, and 1026 feet from the Ratzel 2 gas well. And, as noted above, is comprised of microbial gas. However, the water supply for Salsman (150 to 200 feet closer to each of the three gas wells) is one the Department recognizes in the technical data that accompanies its September 14 letter as having eliminated free gas. Additionally, the Stover water supply (1245 feet from the Ratzel 1 gas well, 1260 feet from the Ratzel 3, and 1260 feet from the Ratzel 2 gas well) has registered 0.00% CGI readings at the vent for the 78 tests from September 3, 2009 through August 16, 2010.*

*All of this data substantially undercuts the Department's conclusion that the methane in the three water supplies is coming from Cabot's gas wells.*

First unnumbered paragraph on page 4:

**“In addition to the material omission in Cabot's Final Report of information and substantive analysis about free combustible gas, multiple inconsistencies and discrepancies exist between well construction information contained in Cabot's Final Report and Department inspection reports that document the Department's observations in the field. These inconsistencies call into question Cabot's assertion that the remaining ten Defective Wells and the other Cabot Gas Wells within the Affected Area meet or exceed the requirements of the Pennsylvania Oil and Gas Act.”**

*Notably, the Department does not provide an explanation or any documentation to support its allegations as to the nature of the alleged “multiple inconsistencies and discrepancies.” Therefore, Cabot is unable to provide specific rebuttals thereto. Cabot requests that the Department provide relevant documentation and permit Cabot a reasonable time to evaluate and explain any alleged inconsistencies.*

*Additionally, the Department has improperly and without authority modified the 1,000 foot “presumption” distance in the Oil & Gas Act. See 58 P.S. §601.208(d)(3). In many instances,*

*the Department has presumed, without any documented proof, that Cabot is responsible for gas migration to water wells outside of the 1,000 foot distance. (See, e.g., Michael Ely, Norma Fiorentino, Timothy Maye residences.)*

Third unnumbered paragraph on page 4:

**Cabot's Final Report does not establish a background value for dissolved methane in any individual residential water supply within the Affected Area, nor does it provide quantitative proof that dissolved methane gas above 5 mg/l was present in any residential water supplies *before* Cabot began drilling activities within the Affected Area. In fact, many of the samples identified in Cabot's Final Report were taken *after* Cabot began drilling a Gas Well or Wells near the residential water supply or other places where Cabot obtained the water sample.**

*First, Cabot again takes issue with the DEP's improper and unlawful enlargement of the 1,000 foot "presumption" distance included in the Oil and Gas Act. See 58 P.S. §601.208(d)(3). The legislature of the Commonwealth of Pennsylvania provided, by statute, that an oil and gas driller would be presumed to be responsible for certain water contamination within a specific distance of a gas well if pre-drill water samples were not taken. However, the DEP has inexplicably and unlawfully taken upon itself the responsibility of expanding that defined, specific distance and is now presuming Cabot to be responsible for alleged water contamination for many water sources beyond that 1,000 foot distance. This is improper.*

*More importantly, however, the DEP's statement that Cabot has not provided quantitative proof of dissolved methane at 5 mg/l or higher pre-drill in the Affected Area completely disregards, ignores, and discounts the extensive pre-drill testing that Cabot performed and the analysis of that testing by CEC, as reported in graphic form on Figure 3 of the Final Report. There are at least 8 water supplies within the Affected Area that show methane levels of 5 mg/l or higher pre-drill. Moreover, there are at least 14 other such sources outside the Affected Area but within a one-mile radius of the Affected Area. And, that does not include the myriad of water wells that reported pre-drill methane levels of anywhere between 1 mg/l and 5 mg/l within the Affected Area and the same surrounding one-mile radius. Given that data, it is inconceivable that the DEP would take the position that Cabot has not provided any proof that dissolved methane gas above 5 mg/l was present in the residential water supplies in the Affected Area prior to the commencement of drilling activities.*

Fifth unnumbered paragraph on page 4:

**In contrast, after Cabot began its drilling activities within the Affected Area, samples taken by both the Department and Cabot show that residential water supplies within the Affected Area contained *and continue to* contain dissolved methane at levels above 5 mg/l. In other words, nothing in Cabot's Final Report contradicts the conclusion that Cabot's drilling activities in the Affected Area caused residential water supplies to be contaminated with levels of methane above 5 mg/l.**

*The DEP's position that "nothing in Cabot's Final Report contradicts the conclusion that Cabot's drilling activities in the Affected Area caused residential water supplies to be contaminated with levels of dissolved methane above 5 mg/l," again, blatantly ignores and inexplicably discounts the hundreds of pre-drill samples that Cabot took in the Affected Area and one-mile surrounding it, which reveal many water sources that had at least 5 mg/l of methane. See Final Report, Figure 3.*

Concluding paragraph:

*In its concluding paragraph, the Department appears to have made a decision that the only acceptable resolution to the presence of methane in the water supplies in Dimock (which was present prior to Cabot's initiation of drilling activities) is the installation of a community water system.*

*First, it should be emphasized that "[m]ethane gas alone does not cause health problems in drinking water ... ." Water Facts #24: Methane Gas and Its Removal from Wells in Pennsylvania. "Dissolved methane and pure gaseous methane in water are not explosive. ... It does not impair the odor, taste or color of the water, nor does it in any way affect the potability of the water." OSM Report, sec. 3.1. Moreover, this conclusion is arbitrary and capricious and runs counter to established science and the Department's own publications and prior precedence - which all tout a water aeration system as an effective way of removing methane from water.*

*"Well venting will not appreciably remove methane dissolved in the groundwater, however, properly designed water aeration systems are an effective way to lower the concentration of methane dissolved in the water." Methane Gas and Your Water Well, Pennsylvania Department of Environmental Protection Fact Sheet, Rev. 11/2009; see also Water Facts #24: Methane Gas and Its Removal from Wells in Pennsylvania ("Aeration, or air stripping, can also eliminate methane in well water."); Dissolved Gases in Well Water, Agri-Facts by Alberta Agricultural and Rural Development Water Specialists, Rev. July 2009 ("If the gas problem is extreme, removing the gas by aeration may be necessary.").*

*Moreover, the Department routinely has approved and, in certain cases assisted in obtaining funding for, the installation of methane strippers or aeration systems as a way to remedy methane in well water. The Department's online summaries of its investigations in which methane treatment systems or similar methods have been utilized to address methane migration include the following:*

- **Installation of 13 methane treatment systems as a solution:** *Mainesburg Migration, Sullivan Township, Tioga County—Northwest Regional Office, 2004: "The Department became involved with this larger scale stray gas migration in 2004. Elevated levels of fugitive gas were identified in approximately 15 residences. Through a joint action between the department and Township officials, and with funding through a Growing Greener Grant, treatment systems were placed on those affected water wells." Notably, in Mainesburg, the Department set the standard for requiring a treatment system at 20 mg/l of dissolved methane, a much less stringent standard than that to which it now holds Cabot—5 mg/l.*

- **Relief wells and monitoring over four years as a solution:** Hughes Migration, Hamlin Township, McKean County—Northwest Regional Office, June 2006: “In June 2006 the Department responded to two water quality /diminution complaints and determined that a change in water quality was evident. Over-pressured conditions were noted at a recently drilled nearby gas well. The gas well operator drilled new wells for the impacted residences and gas was encountered during the drilling process. Subsequently, when the operator placed additional production casing in the gas well, the Department noted a marked decrease in the amount of gas in the recently drilled water well. Over time the problem has diminished.”
- **Venting and continued monitoring over a period of three years as a solution:** Ohl Complaint, Hebron Township, Potter County—Northwestern Regional Office, June 2007: “The Department responded to a complaint of fugitive gas in a water well that serves a seasonal structure in June 2007. Isotopic analysis indicated a possible similar thermogenic origin of the gas in the water well to a neighboring gas well. Initial efforts to vent the suspected gas well to the atmosphere for an extended time failed to reduce the amount of gas in the neighboring water well. The new well owner placed a down-hole packer and additional production casing in the well. This action did not produce a reduction in the fugitive gas in the water. The Department continues to investigate the complaint.”
- **Venting of water well and monitoring as solution over three year period:** Toy Migration, Armstrong County—Southwest Regional Office, October 2007: “Explosion at a water well enclosure. Well pump was destroyed and damage to the enclosure. No injuries. The source was a nearby operating gas well. The water well has been properly vented and is now back in service. The water well quality was affected during drilling and previously restored by the operator of the gas well. The investigation is ongoing.”
- **Methane strippers utilized as a solution for gas migration:** Dominion Migration, 2007: In 2007, Dominion voluntarily agreed to supply numerous methane stripper systems to residences in Tioga County to resolve methane migration issues.
- **Venting of combustible gas from resident basement and continued monitoring over a two year period as a solution:** Little Sandy Creek Migration, McCalmont Township, Jefferson County—Northwest Regional Office, April 2008: “In April, 2008, the Department was informed of a large fugitive expression in Little Sandy Creek. Subsequent investigation indicated the presence of combustible gas in the basement of a nearby residence. It was determined that the gas was entering the structure through an un-sealed sump opening in the concrete floor of the basement. The sump was vented through the wall and the threat to the home was minimized. During the investigation the Department discovered that two recently drilled gas wells were over-pressured and were producing from different geologic strata. Isotopic analysis indicated that a specific gas well was the probable source of the fugitive gas and measures were undertaken to reduce pressure on

*the casing seat. After continued monitoring at the residence, it was determined that the amount of gas in the sump was decreasing. The basement sump remains vented and the problem is dissipating.”*

- **Methane extraction system and continued monitoring as a solution:** *McNett Township, Lycoming County, East Resources—North Central Regional Office, July 2009. “A natural gas leak from an East Resources Oriskany well was confirmed on July 27, 2009. Methane gas from the well impacted multiple private drinking wells and two tributaries to Lycoming Creek, forced one resident to evacuate her home, and required the closure of access roads near the well. East Resources continues to monitor homes and wells in the affected area (approximately 6000 foot + radius) where methane has been documented and reports to the Department weekly. Methane was evident in some wells and the subsurface. One gas extraction system was installed in a residence. The investigation is on-going.”*

*In light of its past practices in this regard, the Department’s request is inexplicable at the end of its September 14 letter that Cabot discuss with the Department “connecting the Affected Water Supplies into a community public water systems...” After a diligent search, Cabot has found no other documented investigation of methane migration where the Department required a company to install a multi-million dollar community water system to restore or replace affected water supplies. Imposing such a requirement upon Cabot here would be entirely unsupported and unjustified, and would raise numerous questions about the factors motivating such a requirement.*



## **Exhibit B**

### **Summary of Cabot's Good Faith Efforts**

- Plugging and abandoning three safe, properly-constructed, and valuable natural gas wells in response to your statement that the governor and you would insist on Cabot plugging three wells of its own choosing regardless of its ability to demonstrate scientifically that its wells were not the cause of any groundwater contamination. Approximate cost to Cabot: \$2,190,000.
- Providing whole house potable water for residents designated by the Department as Affected Supplies as well as voluntarily providing water for residents who have expressed water quality concerns. Approximate cost to Cabot: \$193,000.
- Providing water testing for residents designated as Affected Supplies as well as other residents in Susquehanna County who have expressed water quality concerns. Approximate cost to Cabot: \$700,000.
- Ordering and purchasing 14 methane treatment systems for residents designated as Affected Supplies. Approximate cost to Cabot: \$109,000.
- Reconditioning a resident's water well at the resident's request. Approximate cost to Cabot: \$5,000
- Repairing and insulating Mrs. Fiorentino's well and piping to prevent her pipes from freezing as they have always done in the past and as they existed on the day that the well cover was removed, by an alleged "explosion." \$1,000.
- Providing or extending vent stacks to vent residents' water wells. Approximate cost to Cabot: \$10,000.
- Retaining Civil Engineering Consultants, a leading environmental consulting firm, to conduct an extensive investigation and report of Cabot's Well, Compressor and Pipeline Operations. Approximate cost to Cabot: \$117,000.
- Retaining Dr. Robert W. Watson, Ph.D, P.E., a leading expert in the oil and gas industry to conduct an extensive investigation and report analyzing Cabot's well completion design and mechanical integrity of the surface and subsurface elements making up its wells in the Affected Area. Approximate cost to Cabot: \$25,000.
- Retained URS to: (i) assist Cabot with meeting all environmental permitting requirements, including, but not limited to, conducting an intensive wetland study to ensure that the wetlands and environment were safe from Cabot's operations; and (ii) assist Cabot with remediation efforts to ensure that releases remediated to Act 2 standards: Approximate cost to Cabot: \$4,725,000.

- Conducting a site investigation in conjunction with the Department, one of the named plaintiffs in the private litigation against Cabot, and URS, a leading environmental consulting firm, to address each and every possible concern or claim the plaintiffs had of suspected environmental contamination, in which URS uncovered no evidence of contamination at any of the fourteen (14) locations identified by Mr. Ely as areas where he claimed to have observed improprieties. Approximate cost to Cabot: \$200,000.
- Total \$8,275.000

TAB 1

COMMONWEALTH OF PENNSYLVANIA )  
 )  
 ) SS:  
COUNTY OF SUSQUEHANNA )

1. I reside at 1401 S.R. 2015, Hop Bottom, PA 18824, and have lived there my whole life.

3. For years after that time, we noticed bubbles in our tap water but did not think anything of it.

5. In class, his teacher opened the jar and lit it, causing a momentary burst of flame.

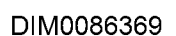
7. More recently, when the Pennsylvania Department of Environmental Protection tested my water, that agency found high concentrations of methane and recommended that I have my furnace vented, which I did.

Martha Locey  
Martha Locey

This 20th day of June, 2010.

Shirley A. Lockhart  
Notary Public


My commission expires: MAY 9, 2013



COMMONWEALTH OF PENNSYLVANIA )  
 )  
 ) SS:  
COUNTY OF SUSQUEHANNA )

1. I am the son-in-law of Mildred Green and I currently reside at 10 Meadowood Drive in Tunkhannock, Pennsylvania.

3. Soon after the well was drilled, my father-in-law and I would fill a bottle with tap water, place a lid on it, shake it, and then light it as we removed the cap.

  
Devan Harbaugh

This 20<sup>th</sup> day of July, 2010.

COMMONWEALTH OF PENNSYLVANIA  
Notarial Seal  
Patricia A. Powers, Notary Public  
Turkhammock Twp., Wyoming County  
My Commission Expires March 28, 2013

COMMONWEALTH OF PENNSYLVANIA )  
 )  
 ) SS:  
COUNTY OF SUSQUEHANNA )

1. My name is Mildred Green, although I am known to many people as Gretchen Green.

3. My husband of 54 years has been deceased for six years.

5. After noticing bubbles in the water, my husband and son-in-law, <sup>and</sup> Devin Harbaugh currently of Tunkhannock, Pennsylvania, would entertain themselves and others by filling a milk jug with our tap water from our sink, placing a lid on it, shaking it up, and lighting it after removing the cap.

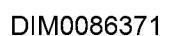
7. After about one year, the novelty wore off and they stopped lighting  
water on fire.

Mildred Green  
Mildred Green

This 20<sup>th</sup> day of July, 2010.

Shirley A. Lockhart  
Notary Public

My commission expires: MAY 9, 2013



**AFFIDAVIT OF NORMA MCNEAL**

COMMONWEALTH OF PENNSYLVANIA )  
 )  
COUNTY OF SUSQUEHANNA ) SS:

NORMA MCNEAL states as follows:

1. I reside at 9889 S.R. 267, Montrose, Pennsylvania 18801, which is near the town of Lawton, and am 72 years old.
2. I graduated from Rush High School in Rush, PA in 1956 and have lived in this area my whole life. My graduation class had twelve students, six girls and six boys.
3. As a teenager, it was a "morning ritual" for students to try to be first into the high school, which was the top floor of the building, and light with fire the first draw of water from the water fountain to create a momentary flame.
4. The building that was the high school I attended now houses the Smith Lawton Millwork furniture factory.

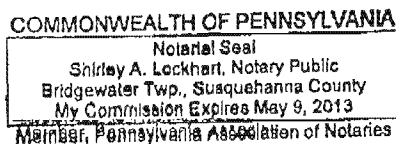
Norma McNeal  
Norma McNeal

Sworn to and subscribed before me

This 20<sup>th</sup> day of July, 2010.

Shirley A. Lockhart  
Notary Public

Notary Public  
My commission expires: MAY 9, 2013



TAB 2



**Oprendeck, Anthony**

**From:** Farnham & Associates, Inc. [dfarnham@epix.net]  
**Sent:** Wednesday, January 28, 2009 8:25 AM  
**To:** Oprendeck, Anthony  
**Subject:** RE: Well site distance

Hi Tony,

Thanks for the info.

I have heard much about the water well/gas contamination issue lately. Phone is ringing off the hook. I live about 15 miles from the Cabot play in Dimock and know many of the people in the area. Sounds like a grouting issue. I have hit natural gas in several water wells in NW Susquehanna County a few in the Dallas area (lower Wyoming County) and Bradford County. I have not personally hit any in the area in question. Certainly nothing anywhere near the volume seen there. Occasional H2S from Lock Haven geological formation, but no discernable natural gas.

That being said, can I help in any way? I have installed many air strippers over the years for Iron, Manganese, H2S and gasoline removal.

I have a number of well applications to be submitted as soon as my clients decide what they are going to do this year - I will keep you posted.

Good to hear from you.

<b>Daniel B. Farnham, Principal Engineer</b> <i>President</i>	Engineers with Business Sense <b>Farnham &amp; Associates, Inc.</b> <b>F-Cote Chemical, Inc.</b> 1620 N. Main Ave., Suite 1 Scranton, PA 18508
dfarnham@epix.net www.farnhaminc.com	tel: (570) 558-5267 fax: (570) 558-3478 mobile: (570) 614-3479

Want a signature like this?

**From:** Oprendeck, Anthony [mailto:aoprendeck@state.pa.us]  
**Sent:** Tuesday, January 27, 2009 7:20 AM  
**To:** 'Farnham & Associates, Inc.'  
**Subject:** RE: Well site distance

Dan - So sorry I haven't been getting back to you. I'm sure you've heard about the gas migration situation in Susquehanna Co.....we've been consumed with it for several weeks now. Anyway, to answer your question (s):.....Section 205 of the Oil and Gas Act cites our isolation distance requirements. If your "well site" is proposed to be closer than 100' to a stream, spring, body of water shown on 7 1/2 minute quad map or to a wetland greater than one acre in size, you must submit a form requesting waiver of distance requirements prior to constructing site.

As far as getting involved with frac wastewater issues, I'd try someone at POGAM, IOGA or our Harrisburg Central Office folks:

Still want to talk with you regarding what you've heard from western PA.

Will try to call you today. If not cancelled due to pending storm, I will be in Williamsport tomorrow and Thurs conducting interviews for new (badly needed) field staff out that way.

2/17/2009

Hope all is well. Talk with you soon.

Tony

-----Original Message-----

**From:** Farnham & Associates, Inc. [mailto:dfarnham@epix.net]

**Sent:** Wednesday, January 21, 2009 12:49 PM

**To:** Oprendeck, Anthony

**Subject:** Well site distance

Tony, are there any state requirements regarding well site distance from bodies of water? There is nothing noted on the permit addendum - let me know.

Want a signature like this?

---

**From:** Farnham & Associates, Inc. [mailto:dfarnham@epix.net]

**Sent:** Wednesday, January 14, 2009 11:11 AM

**To:** Tony Oprendeck (aoprendeck@state.pa.us)

**Subject:** Issues

Tony, just read an article in the paper about a DEP/Industry partnership with the objective of resolving frac wastewater issues. Apparently, the group just met in Harrisburg. How can I get involved?

Also, give me a call when you get a chance - I'm curious about the issues in Western PA that are circulating in the industry.

Thanks, Tony.

Daniel B. Farnham, Principal Engineer  
President

dfarnham@epix.net  
www.farnhaminc.com

Engineers with Business Sense  
Farnham & Associates, Inc.  
1620 N. Main Ave., Suite 1  
Scranton, PA 18508  
tel: (570) 558-5267  
fax: (570) 558-3478  
mobile: (570) 614-3479

Want a signature like this?

2/17/2009

TAB 3

COMMONWEALTH OF PENNSYLVANIA )  
 )  
COUNTY OF SUSQUEHANNA )

DIM0086377


COMMONWEALTH OF PENNSYLVANIA )  
 )  
 ) SS:  
COUNTY OF SUSQUEHANNA )

1. I am the Director of the Susquehanna County Emergency Management Agency in Susquehanna County, Pennsylvania.

3. When I arrived, the fire department had checked the area of the well pit and all surrounding buildings for the presence of gas and to the best of my knowledge they found no gas.

Charlene Moser

This 21<sup>st</sup> day of June, 2010.

  
Notary Public  
My commission expires: 11/3/13

